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HEALTH MANPOWER PILOT PROJECTS PROGRAM

HMPP #168

**PARAMEDIC IMMUNIZATION PILOT PROJECT
ALAMEDA COUNTY**

**CLOSING REPORT
DECEMBER 1999**

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TABLE OF CONTENTS

	<u>Page</u>
I. Project Background -----	1.
II. Status of Project -----	2.
III. Project Evaluation -----	2.
IV. Findings -----	14.
V. Comments of Interested Parties -----	15.

HEALTH MANPOWER PILOT PROJECTS PROGRAM

HMPP #168 PARAMEDIC IMMUNIZATION PILOT PROJECT ALAMEDA COUNTY

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I. Project Background

The Office of Statewide Health Planning and Development (Office) received an application from Alameda County Emergency Medical Services District requesting consideration of an EMT-Paramedic Immunization Pilot Project under the Health Manpower Pilot Projects program. The Paramedics would provide childhood immunizations at Alameda County Fire Stations.

Current law permits EMT-Paramedics the ability to provide definitive advanced life support in the pre-hospital emergency medical setting. The provision of immunizations is not permitted under current law.¹ The Emergency Medical Services Authority, the state agency that licenses the EMT-Paramedics, has a trial studies section for expanded scope of practice; however, limitations are imposed on the subject matter. Proposals submitted to that section may only be for medications or procedures performed in the pre-hospital emergency setting.²

Alameda County Emergency Services District, the sponsor of the pilot project, asserted that the Alameda County Public Health Department was striving to maximize immunization opportunities in order to decrease preventable childhood infectious disease. Immunization clinics had in the past been offered at selected sites out in the community, including fire department sites, but the funding to staff such clinics was eliminated in 1995. In an effort to re-establish community outreach, the Alameda County Public Health Department was seeking interested agencies to sponsor immunization clinics and provide the staff necessary to run them. In return, the Public Health Department would provide the necessary training, vaccine serum and supplies.

The sponsor also asserted that a 1996 retrospective study of kindergarten health records showed that only 66.4% of the children in Alameda County were up-to-date on their vaccinations by age two. According to the County Health Department, children in Alameda County were still suffering needlessly from serious childhood diseases because they were not immunized.

Further, the sponsor asserted that low immunization/testing rates are not the result of any one factor but a combination of many. Barriers to improving childhood vaccination included: 1) the cost of vaccines; 2) convenient access to health care facilities; and 3) education regarding the importance of receiving vaccination at the recommended intervals.

¹*Health and Safety Code, Division 2.5, commencing with Section 1797, the Emergency Medical Services System and the Prehospital Emergency Care Personnel Act.*

²*California Code of Regulations, Title 22, Division 9, Chapter 4, commencing with Section 100135.*

The purpose of the pilot project was two-fold:

- (1) To teach new skills - specifically, administration of childhood immunizations - to an existing category of health personnel (EMT-Paramedics) and expand their scope of practice to utilize these skills under specified conditions,
- (2) To develop a demonstration community based outreach immunization program utilizing EMT-Paramedics, who had been taught the new skills, in fire-stations of targeted areas in Alameda County's EMS District.

The project was to test and demonstrate that these activities could be implemented without compromising patient safety.

Trainees selected to participate in the pilot project would be licensed and accredited paramedics (EMT-P) employed by Alameda County Fire Department. Paramedics participating in the pilot project would be freed from regular duties during immunization clinic operations.

The Project Sponsors had been seeking legislation to amend the paramedic licensure laws to include the administration of childhood immunizations. Assembly Bill AB 678, carried by Assembly Member John Dutra, provided the vehicle for change. The bill was heard by the Assembly Health Committee in 1999 but failed passage. The author of the bill indicated to Dr. Pointer, Medical Director in the Alameda Emergency Medical Services Agency (EMSA), that there was insufficient data available to move the bill forward. The Committee granted Assembly Member Dutra reconsideration of the legislation in January 2000, when the results of the pilot project would be available.

II. Status of Project

The HMPP # 168 Paramedic Immunization Pilot Project commenced in Alameda County on May 29, 1998 and concluded May 29, 1999. Dr. Pointer, Project Director, provided a written notification to the Office of their intent to discontinue the pilot project at the end of May, indicating that they felt that the pilot project's mission had been met. Dr. Pointer stated that, through the five clinics held and the immunization of 184 patients, they had demonstrated that paramedics could safely and effectively administer childhood immunizations. He stated that evaluations performed by nurses and physicians in the project showed excellent performance in all assessment categories.

III. Project Evaluation

The California Health and Safety Code, Section 128165 requires the Office to conduct periodic on-site visitations for approved Health Manpower Pilot Projects. It also requires an evaluation of the project to determine seven factors, Sections 12865 (a) through (g).

Data is taken from a number of sources. They include site assessment visit report(s), the quarterly reports provided by the clinic sites (utilization data and patient/family acceptance data), and immunization data from the California Department of Health Services, Immunization Branch.

Section 128165 (a): The new health skills taught or extent that existing skills have been reallocated.

The EMT-Paramedics selected were licensed and accredited employees of Alameda County's EMS District. Of the fifteen Paramedics selected, fourteen completed the training provided during the Didactic and Clinical Phase. One of the selected EMT-Paramedics was unable to continue due to other commitments. The outreach clinic constituted the employment/utilization (E/U) phase.

Skills taught are summarized as follows:

- Appropriate immunization techniques
- Appropriate documentation
- Handling and storage of vaccines
- Protocol review regarding adverse reactions, contraindications, and precautions
- Identification of patients who have a primary care physician, and encouraging them to return to their physicians for future immunizations and on-going medical care needs
- Identification of patients without a primary care physician and referring them to local county health agencies
- Checking on referral follow-ups for those coming into county system
- Provision of immunization data to the county public health departments.

Trainee Competency: The evaluation team found that the Paramedics exhibited proper techniques in immunization preparation and injections, the review of immunization records, and documentation of vaccines given. They were professional in their interactions with the patients and exhibited good 'bedside manner'. Paramedics answered questions asked of them by parents/patients appropriately. Where further clarification was needed, the Paramedics requested assistance from the Supervising Nurse(s). The *Evaluation Team and Team Evaluation Report* is available from the Office on request. Observations and performance evaluations were documented by the supervisor(s) during the clinical rotations at the Kaiser Permanente Pediatric Clinic.

Records for each Paramedic indicate their having passed the written exam at the conclusion of the didactic phase. The requirement for passing was an 80% score.

Documentation of the employment/utilization (E/U) phase indicated that the participating Paramedics had acquired the desired skills. The outreach clinic days held at the Alameda County Fire Stations constituted the employment/utilization phase.

The table below summarizes their E/U phase activity.

	Paramedics On site	Duty/Services Rendered	Date	Site
1.	Brian Bailey	Immunization Management	9/14/98	Station # 3
2.	Ed Bortoff	Immunization Management	1/27/99	Station # 4
3.	Gregory Fernandez	Records Management	1/27/99	Station # 4
4.	Gregory Fisher	Records Management	2/27/99	Station # 4
5.	Ron Johansen	Immunization Management	1/27/99 2/27/99 9/14/98 9/08/98	Station # 4 Station # 4 Station # 3 Station # 9
6.	Jim Lakes	Immunization Management Records Management	5/22/99 9/14/98	Station # 16 Station # 9
7.	Fred Little	Records Management	5/22/99 2/27/99 1/27/99 9/14/98 9/08/98	Station # 16 Station # 4 Station # 4 Station # 3 Station # 9
8.	John McClintic	Immunization Management	5/22/99	Station # 16
9.	Richard Solomon	Records Management	2/27/99	Station # 4
10.	John Torres	Records Management	5/22/99 2/27/99	Station # 16 Station # 4
11.	Chuck Towns	Records Management	1/27/99 2/27/99	Station # 4 Station # 4

Station #3 San Leandro, Station #4 Castro Valley, Station #9 San Lorenzo, station #16 Dublin, California.

Three of the fourteen Paramedics in the program were unable to participate in the E/U phase because of scheduling difficulties. They were: Rory Bodnar, Kris Kersletter, and Kenneth Silviera. Of the eleven continuing in the E/U phase, five had immunization management experience, seven had records management experience; only one had both immunization and records management experience.

Section 128165 (b): Implications of the project for existing licensure laws with suggestions for changes in the law where appropriate.

At this writing, the Office of Statewide Health Planning and Development's (OSHPD) Health Manpower Pilot Projects Program finds no need for statewide change in existing law governing the scope of practice for paramedics.

The pilot project program in Alameda County, conducted on a relative small scale, demonstrated that under proper circumstance: (1) Paramedics could safely provide childhood immunizations, and (2) outreach clinics utilizing fire-station paramedic staff could make a useful contribution to overall community efforts to immunize all children. However, with only one year of experience in one community with paramedics providing immunizations to 184 children, a change in the scope of practice for paramedics statewide is not warranted.

The Office received three requests for information regarding HMPP#168 and the HMPP application workbook. They were from the Los Angeles area, Bakersfield, and Sacramento. There may, therefore, be some interest in counties elsewhere in California in outreach clinic immunization programs using paramedic. The OSHPD Health Manpower Pilot Projects Program is available for this purpose.

Important characteristics that seemed to have led to the success of the Alameda County pilot program included:

1. Demonstrated community support for the program with county Health Department sponsorship and close coordination with the local Emergency Medical Services agency, Fire Department (if paramedics are under the Fire Department), and other participants in the county immunization effort.
2. Formal didactic, clinical, and field training in childhood immunization practice for paramedics participating in the program.
3. Involvement of a nurse experienced in childhood immunization practices, record keeping, patient and parent health education, and immunization clinic management, in a consultative role, at the sites where the paramedic outreach sources are provided.
4. Measurable success in reaching and safely providing immunizations to children in the county who might not, otherwise, have access to these preventative services, and, in referral to resources for ongoing primary care.

The HMPP #168 pilot program demonstrated a contribution to improving immunization rates in Alameda County, especially for children six years and older, as shown by the following data.

The program held five clinics (E/U phase). The cities where the clinics were held are San Leandro, San Lorenzo, Castro Valley (2), and Dublin. In total, 191 children came to the clinics and 184 received immunizations. Seven children were not immunized because their records showed that they were up-to-date with the vaccines provided at the clinic. There were no adverse reactions, incidents or occurrences.

The San Lorenzo and San Leandro clinics were held during the month of September 1998 in response to the respective school districts back-to-school-campaign. The response to the clinic is summarized as follows:

Employment Utilization Clinic Site	Number of Trainees at Clinic Site	Number of Children Visiting Clinic	Number of Children Immunized	Age of Children	Number in the Age Group	Vaccine Type and Number Given
Station #3, San Leandro, California Station #9 San Lorenzo, California	6	40	37 (25) (12)	0-2	1	DT (4)
				3-4	4	DtaP (7)
				5	6	TD (9)
				6-9	12	POLIO (18)
				10-13	13	MMR (23)
				14-18	4	HIB (1)
						Hep B (33)
						Total Given (95)

The Castro Valley clinics were held during the month of January and February 1999. Again this was part of the city school districts vaccine preventable diseases education awareness program. The response to the clinic is summarized as follows:

Employment Utilization Clinic Site	Number of Trainees at Clinic Site	Number of Children Visiting Clinic	Number of Children Immunized	Age of Children	Number in the Age Group	Vaccine Type and Number Given
Station # 4 Castro Valley, California	11	108	104 (50) (54)	0-2	0	DT (0)
				3-4	4	DtaP (3)
				5	1	TD (24)
				6-9	29	POLIO (5)
				10-13	61	MMR (11)
				14-18	13	HIB (0)
						Hep B (101)
						Total Given (144)

The Dublin clinic was held May 1999 in response to the call for the Hepatitis B vaccine. The response to that clinic is summarized as follows:

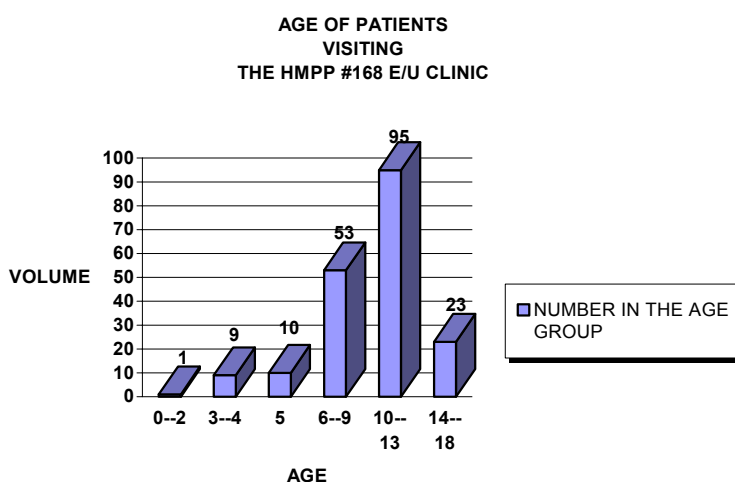
Employment Utilization Clinic Site	Number of Trainees at Clinic Site	Number of Children Visiting Clinic	Number of Children Immunized	Age of Children	Number in the Age Group	Vaccine Type and Number Given
Fire Station # 16 Dublin, California	5	43	43	0-2	0	DtaP (3)
				3-4	1	TD (4)
				5	3	POLIO (2)
				6-9	12	MMR (12)
				10-13	21	Hep B (37)
				14-17	6	
						Total Given (58)

There was a strong response to the call for Hepatitis B Vaccine at each of the five clinics. State laws, now require all students entering junior high school to have been vaccinated for Hepatitis B. The California Department of Health Services, Immunization Branch has indicated that the current Hepatitis B vaccine is a 3-shot series for children before entering 7th grade.

Although the pilot project clinics immunized children of ages of 5 years and under, they mainly provided immunizations to children 6 and older.

The data suggest that the reasons these children came to the fire-station clinics included: (1) the convenience for the parents; (2) the immunizations were given free; and, (3) the children had no primary care provider.

The following is a graph illustrating the age of patients visiting the HMPP #168 outreach clinics.



The following is a comparison of the up-to-date immunization rates for 1996 and 1998 for selected counties from the California Department of Health Services:

Statewide Immunization Rate:	1996 57.3%	1998 62.9%
Counties:		
Alameda	66.4%	No Data
Calaveras	49.3%	No Data
Contra Costa*	65.1%	65.2%
Fresno	48.9%	59.1%
Kern	39.5%	49.9%
Los Angeles	55.0%	62.9%
Marin*	74.6%	No Data
San Diego	63.0%	66.2%
San Francisco*	64.8%	67.7%
San Mateo*	68.7%	76.6%
Santa Clara*	66.7%	65.6%

*Neighboring Counties to Alameda County

Section 128165 (c): Implications of the project for health services curricula and for the health care delivery system.

The EMT-Paramedics were required to participate in 16 hours of didactic training and 4 hours of clinical training.

The recommended time for the curricula used is as follows:

Basic Principles of Immunization	= 3.5 hours
Basic Principles of Vaccination	= 5.0 hours
Immunization Practice, Delivery, Program Design	= <u>5.0 hours</u>

Total course time 13.5 hours

The training curriculum utilized, Teaching Immunization Practices: “A Comprehensive Curricula for Nurses” and the combination of didactic, clinical and field experience, appeared effective for teaching the skills of administering childhood immunizations to the paramedics.

Data from the patient/family questionnaire, returned to the clinic personnel at the end of the clinic day, indicated that parents coming to the fire-station clinics had responded to advertised information provided through:

- the school districts 89/140 = 64%
- newspapers advertisement 34/140 = 24%
- flyers 14/140 = 10%
- drove by the clinic and saw the sign 2/140 = 1%
- other 1/140 = 1%

The data suggest that the fire-department outreach clinics utilizing paramedic personnel could operate as effective partners in a community-wide effort to immunize against childhood diseases, along with the local schools districts, with the help of community newspapers and radio public service advertisements.

Follow-up Referrals: The outreach clinics served, overall, 191 children. All children/parents were provided with on-site referrals for follow-up primary care. The referrals were as follows:

- 54 children to Child Health Disability and Prevention program, a Health Department primary care agency for children
- 103 to Private Medical Doctors
- 9 to Clinics
- 15 to Kaiser (HMO)
- 9 to insurance covered programs,
- 1 child to UCSF

Data from the patient/family questionnaire indicated that 28 out of 140 children (parents responding) did not know where they would go for immunizations if not for the Fire-Department clinic. Further, it was found that it had been more than a year since these children had seen a physician; 11 didn't know when the child had last seen a physician.

The data suggest that the outreach clinics provided an initial access to the health delivery care system for children/parents who were without a primary care source, as well as access to the immunizations.

Section 128165 (d): Teaching methods used in the Project.

There were two phases of trainee preparation: the didactic phase and the clinical phase. The didactic phase was the classroom setting. The curricula included: Teaching Immunization Practices: "A Comprehensive Curricula for Nurses", Alameda County Immunization Assistance Project: "Clinic Manual for Community Organizations Using State Supplied Vaccine", and a computer simulation program: "You Call the Shots", a visual demonstration.

The clinical phase was held at a Kaiser Pediatric clinic. The paramedics received 4 hours of clinic experience.

A third phase, the employment/utilization phase was the actual outreach clinic phase of the project.

The Didactic, Clinical and E/U (field experience) phases of instruction constituted a thorough approach to teaching the skills required.

Section 128165 (e): The Quality of Care and Patient Acceptance of the Project.

The OSHPD evaluation team found that the clinic had a safety protocol and an infection control protocol. No adverse reactions or other medical problems were encountered. During clinic hours, a van was set up to transport medical emergencies. Other emergency equipment and supplies were available to assist the paramedic for minor on-site problems if needed. Also present were the supervising registered nurses, and physician (medical director) for the project.

Paramedics reviewed the fire station protocol with the parents/guardian and discussed the need for the vaccinations available at the clinic. They verified the needed documentation and the immunizations provided.

Consent forms were signed by the parents of the children prior to the provision of immunizations. The paramedics reviewed and documented prior immunization histories and reviewed immunization documents through the total clinic process.

As stated previously, not all children received immunizations. For some, health records indicated that they were up-to-date with the immunizations provided at the clinic.

The children were monitored for possible adverse reactions for at least 20 minutes prior to their departure of the clinic. There were no adverse reactions.

The family questionnaire, administered to the children/parents, indicated (100%) that the service was considered satisfactory. The hours available were very acceptable as well as the site. The parents/children felt very comfortable with the Paramedics providing the immunizations.

The data indicated high quality of care and excellent patient/parent satisfaction with the pilot project services.

Section 1218165 (f): The extent that persons with new skills could find employment in the health care system, assuming laws were changed to incorporate their skills.

The project selected fourteen EMT-Paramedics to provide childhood immunizations. Of the fourteen, eleven paramedics were able to participate. Paramedics were assigned at their particular fire stations where their normal duties take place. Others were rotated into the clinics for the clinic day to provide the employment/utilization experience. The paramedic services were provided at Fire Stations identified in targeted areas and where school districts were closely involved.

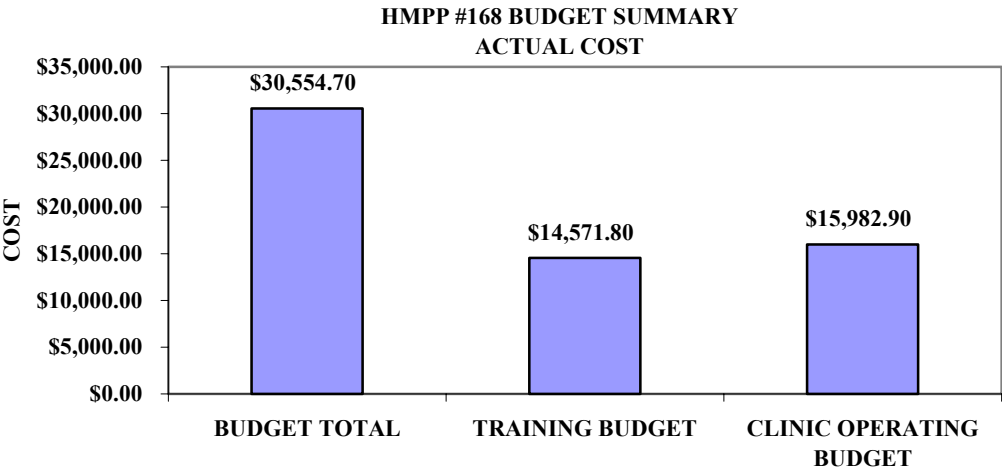
Although it is not possible to infer how extensively the use of paramedics trained in immunization skills might be utilized in other counties, the pilot project does show that the administration of childhood immunizations by paramedics, with oversight by the local emergency medical services agency and close coordination with the local health department, can be beneficial to a community, particularly in areas where community-based clinics are not available.

Section 128165 (g): The cost of care provided in the project, the likely cost of this care if performed by the trainee subsequent to the project, and the cost for provision of this care by current providers thereof.

The cost associated with the preparation and implementation of the pilot project was absorbed by the sponsoring agencies: Alameda County Emergency Services District, the Alameda County Fire Department and the Alameda County Public Health Department.

If appropriately trained EMT-Paramedics were involved in childhood immunization programs, the cost would include the paramedic salary and the administrative expenses associated with using the Fire Station clinics as immunization sites, as described in the proposal. The value of the use of paramedics, as part of the county's overall efforts to achieve high immunization rates, has more to do with effective outreach into certain areas of the community than cost-savings. In this report, the cost is viewed as 'the amount or equivalent' paid or charged for the preparation and implementation of the project (projected and actual budgeted amounts).

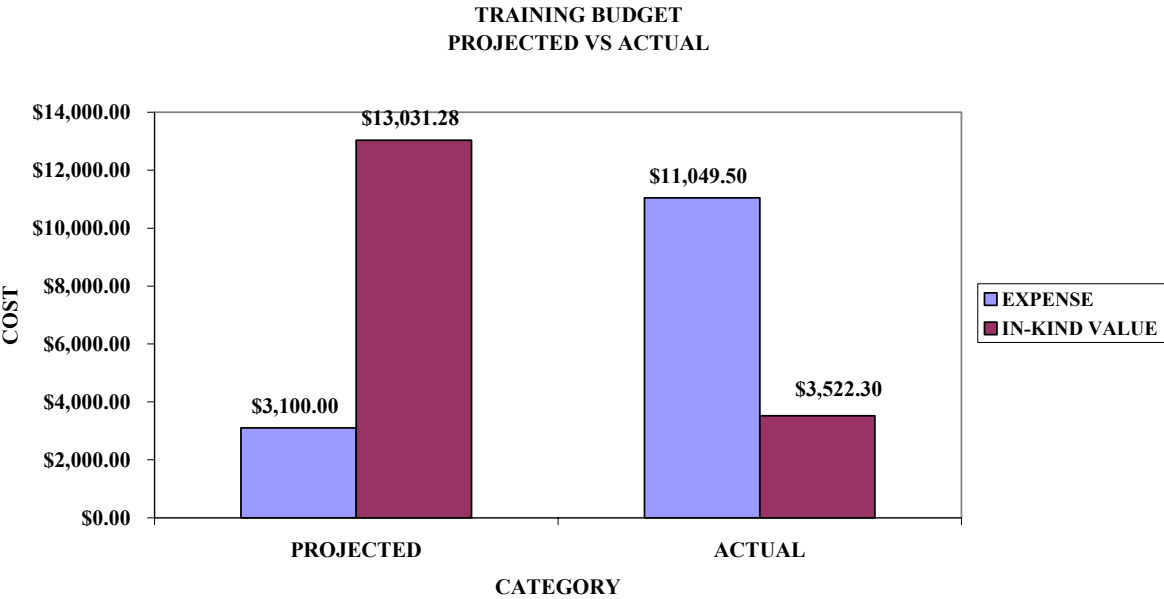
The budget for the project shows that the overall cost associated with the provision of care was \$30,554.70. The budget was two-fold: training cost for the didactic and clinical phase (\$14,571.80) and the immunization clinic operating cost for the employment/utilization phase (\$15,982.90).



The following is a comparison of the projected cost figures with the actual cost. The amounts are shown as expense and in-kind value.

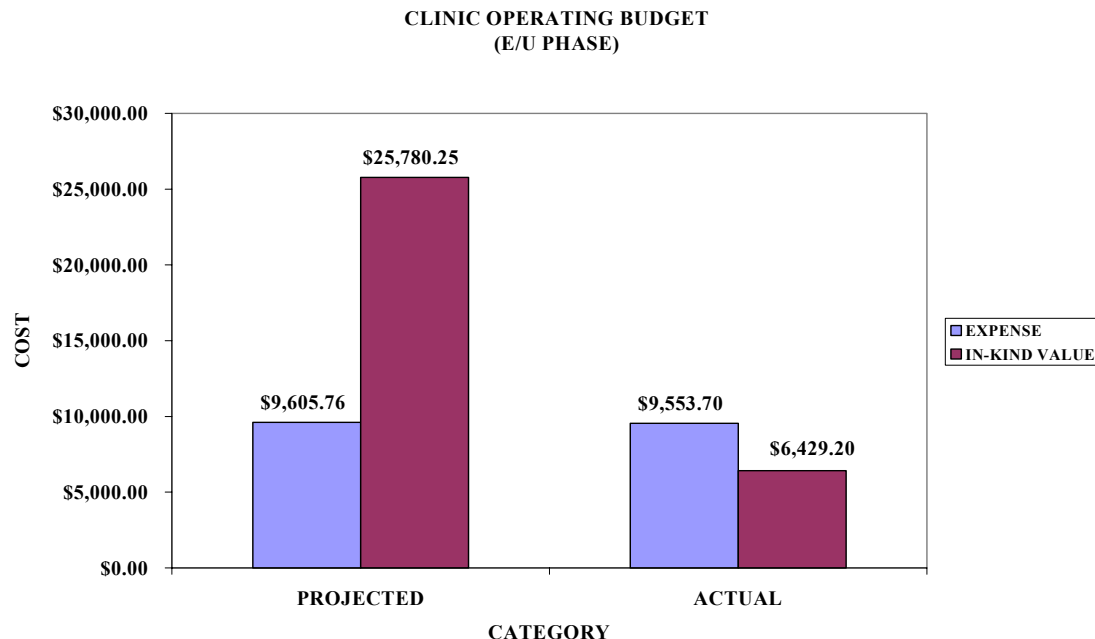
Training Phase: The differences in projected and actual cost figures relate to: (1) the early assumption(s) that salaries of the Paramedics would be considered as an in-kind value, (They are shown as an expense.) and (2) over estimation of materials/equipment.

Training Budget:



Employment/Utilization (Clinic Operating) Phase: The differences in projected and actual cost relate to: (1) over estimation of salaries of certain personnel, (2) the cost of vaccine (The vaccine was available to the project at no cost to the project.), and (3) the expected indirect county administrative cost.

Employment/Utilization Budget:



A more complete budget itemizing personnel, setting (project facility), materials/equipment, continuing education, and administrative costs is available from the Office on request. The budget is summarized as follows:

Personnel:

The Paramedics received salaries at the regularly scheduled rate of \$37.05 per hour. They received twenty hours of training for a total cost of \$10,744.50. The amount was charged to the budget as an expense. During the E/U phase, the Paramedics received a salary at the same rate. However, the hours were different. There were five clinics with an average of 4.4 paramedics per clinic, each serving four hours at \$37.05 per hour. The cost was charged to the project at \$3,266.40.

While participating in the project, the trainees (Paramedics) were freed from their regular scheduled duties. Their duties were assigned to others, shown on the budget as “on-duty Paramedics”. Their salaries were not charged to the project.

Public Health/Fire Liaison Nurses provided classroom instructions. Their salary schedule was \$35.00 per hour and shown as an in-kind value. Supervising nurses were available at each clinic. The budget shows that there was one nurse per clinic (5 clinics) at \$35.00 per hour. The amount was charged to the budget as an in-kind value of \$700.00.

Project preparation time was charged to the Director of the Alameda County EMS District as an in-kind value of \$867.30. The Alameda County EMS District Medical Director provided the medical oversight and on-site physician assistance throughout the project. The cost is reflected on the budget as an in-kind value of \$4,346.00.

An on-duty engine company was available and dedicated to each E/U clinic operation. Its purpose was to serve as the transport team for any children experiencing contraindications requiring hospital care. The cost was charged to the budget as an in-kind value of \$1,383.00.

Setting:

Training classes were conducted at the Alameda County EMS District Fire Department - Station # 4 San Leandro, California. There was no cost for this setting. The clinical phase was held at Kaiser Pediatric Clinic at no cost to the project. The E/U clinic operations were held at different Alameda County EMS District Fire Stations. The site cost reflected the purchase of draperies (used to separate the area designates as immunization injection site), tables, and refreshments for clinic use. The cost of the materials was \$1,500.00 and charged to the project as an expense.

Materials/Equipment:

Training materials, e.g., training manuals, computer programs, were charged to the budget as expense items, the amount \$305.00. Advertisement activities were charged as an in-kind value of \$25.00. Equipment purchased for the project included a freezer for vaccine and a cooler for vaccine transport. The cost was charged to the budget as an in-kind value of \$600.00.

Disposable materials such as syringes, band-aids were charged as an expense. The amount was \$125.00.

Administrative:

Administrative support for the project included clinical clerical support, records maintenance, and indirect activities. The support was available at no cost to the project.

Continuing Education:

Paramedics received a salary while obtaining continuing education. The salary rate \$32.00. The total cost charged to the project was \$44,668.30. Instructional cost was in-kind at no charge to the project.

The Likely Cost of this Care if Performed by the Trainee Subsequent to the Project: The cost of this care if performed by the Trainees subsequent to the Pilot Project is unknown. However, it is believed that the cost could increase due to economic inflation factors, salary adjustments of personnel, and the number of community settings and clinic hours available.

The Cost for Provision of this Care by Current Providers Thereof: The project people have indicated that there was no attempt, on their part, to compare the cost of the service to other providers of the same or similar service. The length of the pilot project, 1-year, did not provide them with the necessary timeframe for community cost comparisons.

However, the parents of children interviewed by the OSHPD site evaluation team indicated the following as it relates to the cost of obtaining/receiving care (immunization):

	Physician A	Physician B
Cost of Visit to Physician's Office	\$ 20.00	\$40.00
Cost of the Immunization	<u>\$ 80.00</u>	<u>\$50.00</u>
Total Cost per Child	\$100.00	\$90.00

There was no cost to the parent at the pilot project sites.

It would appear that the main value of the paramedic-based program is not in cost savings but in use of fire stations and paramedics as a way of reaching out into the community to enhance overall efforts to achieve immunization of all children.

IV. Findings

Overall, the OSHPD finds that the HMPP #168 was a useful outreach approach to improve access to disease preventable vaccinations for children ages 0-18, especially for children 6 years and older.

The pilot project in Alameda demonstrated the following:

1. Paramedics can be trained in the skills of childhood disease immunization and, under appropriate circumstances, can safely and effectively administer immunizations to children.
2. Fire-stations, with fire-trucks and ambulances, can be suitable venues for conducting immunization programs for children, utilizing paramedic personnel, especially for children 6 years and older.
3. Immunization programs conducted by paramedics in district fire-stations were well received by children and their parents – and can complement other community efforts to achieve high childhood disease immunization rates.
4. Success of the program depended on a number of factors in addition to a formal curriculum for training paramedics in immunization skills. They include: (1) close coordination between local health department, fire department and emergency services; (2) coordination with other community immunization program efforts, such as programs in the schools, and (3) consultative participation of nurses experienced in administration of childhood immunization programs.
5. Although costs and cost/benefit were not analyzed in detail, it would appear that the main value of the paramedic-based program is not in cost savings, but in the use of fire stations and paramedics as a way of reaching out into the community to enhance overall efforts to achieve immunization of all children.

V. Comments of Interested Parties

A draft report was circulated among members of the pilot project evaluation team as well as the sponsors of the Alameda pilot project for their comments.

The Alameda County pilot project sponsors considered the OSHPD report a fair appraisal of their project. They had hoped that the findings of the pilot project could serve as the basis for legislation that would allow the program to be perpetuated in Alameda County, and would permit paramedic participation in immunization programs in other counties as well.

The Immunization Branch of the Department of Health Services considered the paramedic outreach program a useful addition to Alameda County's community-wide immunization effort. They point out that, ideally, children should receive all their immunizations before the age of 2; immunization of infants under 2 years is their highest priority. The Alameda paramedic project did not appear to reach that age group so well. Rather, the Alameda project seemed to reach children 6 years and older, and mainly for the hepatitis immunizations. They also comment that any paramedic outreach immunization program should be part of an overall community-wide immunization effort-for which the local health department is the lead agency.

Representatives from Nursing pointed out that public health nurses, school nurses, and nursing staff in community clinics are the mainstay of county-wide efforts to provide immunizations to all infants, and especially for those without insurance or easy access to medical care. If funding to support these public health efforts were adequate, there would be no need to enlist paramedic services. Moreover, they point out, there are no cost-savings, since paramedic salaries and the costs of their training and special supervision of the immunization clinics in the fire-stations are more expensive than the public health nursing approaches. In the Alameda project the paramedic outreach was not particularly successful in reaching infants under 2 years; most of the children immunized were 6 years and older. The nurses questioned whether one, relatively small, (only 11 paramedics) pilot in Alameda could validly serve as the basis for changes in scope of paramedic practice statewide. However, in discussions, they expressed the view that it might be reasonable to continue the program in Alameda County if the conditions of the project continued to be met (i.e. health department sponsorship, close coordination with overall community efforts, formal training with refresher training requirements, nursing participation in the outreach clinics).